Perfect aire®

Your Source for Home Comfort

12,000 BTU / 15 SEER QUICK CONNECT

DUCTLESS MINI-SPLIT

With 11,500 BTU Heat Pump

INSTALLATION MANUAL

FOR MODELS:

1PAMSHQCW12-15
Indoor Wall Unit

1PAMSHQCW12-15
Outdoor Condenser

Before using your air conditioner, please read this manual carefully and keep it for future reference, along with your receipt.

Contents

This manual provides the information needed for proper use and maintenance of this air conditioner. Basic preventative care can help extend the life of this unit. The “Troubleshooting Tips” section in this manual contains a chart with solutions to the most common problems. Referring to this section may save time and prevent the need for a service call in the event of a problem.

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CAUTION

- Contact a trained service technician for repair or maintenance of this unit.
- Contact an installer for installation of this unit if necessary.
- The air conditioner is not intended for use by young children without supervision. Young children should be supervised to ensure that they do not play with the air conditioner.
- Disabled persons may require assistance with set up.
- If the communication cable is damaged or needs repair, replacement work should be performed by trained service technician only.
- Installation and repair work must be performed in accordance with the national wiring standards by a trained service technician only.

Safety Precautions

To prevent injury to the user or other people and property damage, the following instructions must be followed. Incorrect operation due to ignoring instructions may cause harm or damage.

■ Failure to adhere to each of the following precautions can lead to results classified as follows:

⚠ ⚠ **WARNING**	This symbol indicates the possibility of death or serious injury.
⚠ **CAUTION**	This symbol indicates the possibility of injury or damage to property.

■ Meanings of symbols used in this manual are as shown below.

⃠	Never do this.	!	Always do this.

⚠ ⚠ WARNING

- Contact a trained service professional for installation. If installation done by the user is incorrect, it can cause water leakage, electrical shock or fire.
- Install according to these exact installation instructions. If installation is not performed correctly, it can cause water leakage, electrical shock or fire.
- Use the enclosed accessories and parts for installation in order to avoid unit failure, water leakage, electrical shock or fire.
- Install at a location that is strong enough to withstand the weight of the indoor and outdoor units. If the installation is not properly done or location is not strong enough to hold the units, the set can drop and cause injury to the unit and persons.
- For electrical work, follow the national wiring standards, regulartions, and these installation instructions. An independent circuit must be used. If electric circuit capactiy is not enough or the electrical work is defective, it can cause electrical shock or fire.
- Use the specified cable and connect it tightly, clamping the calbe so that no external force will be placed on the terminal. If connection is not perfect, it can cause the connection to heat up and possibly set fire.
- Routing of the wiring must be aproperly arranged so the control board cover is fixed properly. If the control board cover is not fixed perfectly, it can cause the connection to heat up, set fire, or electrical shock.
- When carrying out piping connection, take care not to let air substances other than the specified refrigerant go into the refrigeration cycle in order to avoid causing lower capacity, abnormally high pressure in the refrigeration cycle, explosion and injury.
- Do not modify the length of the power supply cord, do not use extension cord, and do not share the circuit with other electrical appliances. Doing any of these things can cause fire or electrical shock.

⚠ CAUTION

- This equipment must be grounded and installed with a grounded circuit breaker. Electrical shock could occur if unit is properly grounded.
- Do not install this unit in a place where leakage orf lammagle gas may occur. A gas leak near the unit can cause fire.
- Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage items such as furniture and electronics.

Installation Instructions

Selecting an installation location

Please read through the following directions completely before installing. When installing, follow these step by step.

Indoor Unit

- Do not expose the indoor unit to heat or steam.
- Select a place where there are no obstacles in front or around the unit.
- Make sure that condensation drainage can be conveniently routed away.
- Do not install near a doorway.
- Ensure that the space on the left and right of the unit is more than 4.75 in. (12 cm).
- Use a stud finder to locate studs to prevent unnecessary damage to the wall.
- The indoor unit should be installed on the wall at a height of 7.55 ft (2.3 m) or more from the floor.
- The indoor unit should be installed allowing a minimum clearance of 6 in. (15 cm) from the ceiling.
- Any variations in pipe length may require adjustment to refrigerant charge.
- There should not be any direct sunlight. Sunlight will fade the plastic cabinet and affect its appearance.

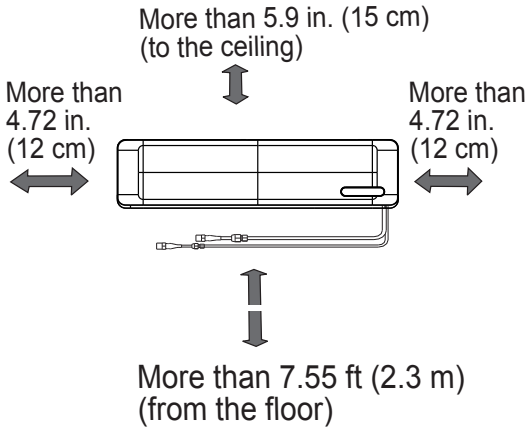


Fig. 1

Outdoor Unit

- If an awning is built over the outdoor unit to prevent direct sunlight or rain exposure, make sure that heat radiation from the condenser is not restricted.
- Ensure that the clearance around the back of the unit is more than 12 in. (30 cm) and left side is more than 12 in. (30 cm). The front of the unit should have more than 79 in. (200 cm) of clearance and the connection side (right side) should have more than 24 in. (60 cm) of clearance.
- Do not place animals and plants in the path of the air inlet or outlet.
- Take the air conditioner weight into account and select a place where noise, vibration and warm air from the air conditioner will not be an issue for you and your neighbors.

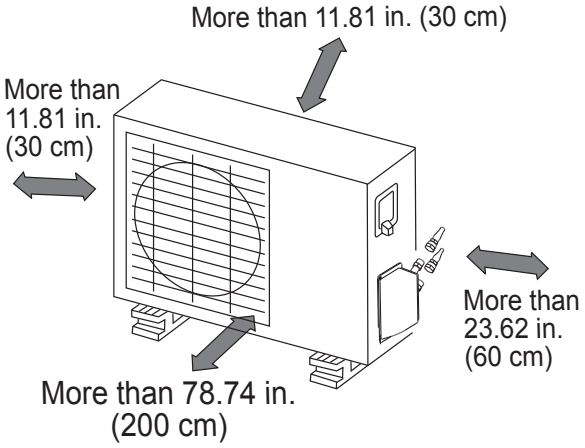


Fig. 2

Outdoor Unit - Rooftop Installation

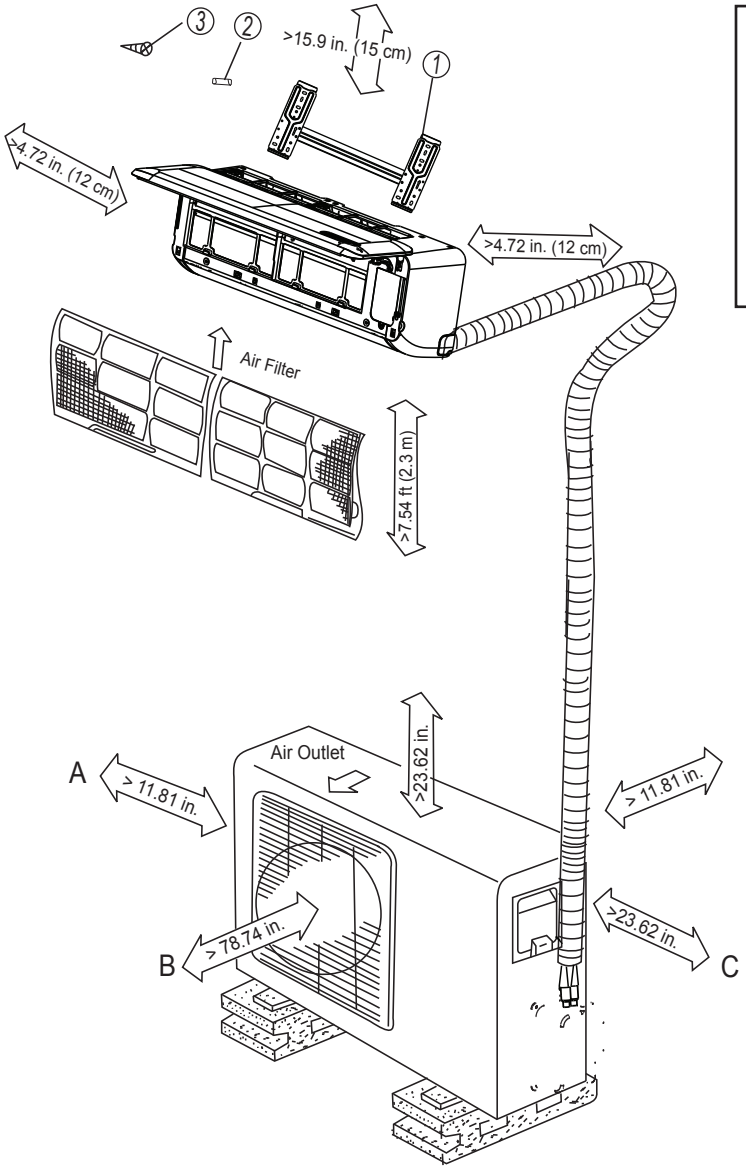
- If the outdoor unit is installed on a roof, be sure to level the unit.
- Ensure the roof structure and anchoring method are adequate for the unit location.
- Consult local codes regarding rooftop mounting.
- If the outdoor unit is installed on a roof structure or external walls, this may result in excessive noise and vibration, and may also be classified as a non-serviceable installation.

Tools Required for Installation

- Level gauge
- Screwdriver
- Electric drill, Hole core drill (3.54 in./90 mm)
- Flaring tool set
- Specified torque wrenches: 1.8kgf.m, 4.2kgf.m, 5.5kgf.m, 6.6kgf.m (different depending on model no.)
- Spanner (half union)
- Hexagonal wrench (0.157 in./4 mm)
- Gas-leak detector
- Vacuum pump
- Gauge manifold
- Users manual
- Thermometer
- Multimeter
- Pipe cutter
- Measuring tape

Installation Instructions *(continued)*

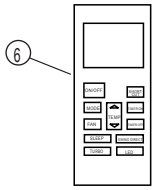
Number	Name of Accessory	Quantity
1	Installation Plate	1
2	Clip Anchor	5–8 (depends on model)
3	Self-tapping Screw A ST3.9X25	5–8 (depends on model)
4	Seal	1
5	Drain Joint	1
6	Remote Control	1
7	Self-tapping Screw B ST2.9X10 (optional)	2
8	Remote Control Holder (optional)	1
9	Quick connecting refrigerant pipe (line set)	1
10	Sound deadening pads (used to wrap up the quick connectors)	2

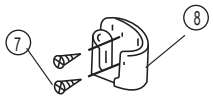


⚠ CAUTION

- Use a stud finder to locate studs to prevent unnecessary damage to the wall.
- Two of the A, B and C directions should be free from obstructions.
- Copper lines must be insulated independently.

⑨ *Quick Connecting Refrigerant Pipe (Line Set)*





NOTE: *All the pictures in the manual are for explanation purposes only. The actual shape of the unit you purchased may be slightly different, but the operations and functions are the same.*

NOTE: *The parts listed above are included with this unit. Any other required tools/items for installation must be purchased.*

Installation Instructions *(continued)*

Indoor Unit Installation

1. Install the Installation Plate

- Fit the installation plate horizontally on structural parts of the wall with space around the installation plate.
- If the wall is made of brick, concrete or the like, drill five or eight 5mm/0.197in diameter holes in the wall. Insert Clip anchor for appropriate mounting screws.
- Fit the installation plate on the wall with five or eight type “A” screws.

NOTE: Fit the Installation Plate and drill holes in the wall according to the wall structure and corresponding mounting points on the installation plate. (All units are in "mm/in." unless otherwise noted.)

Fig. 4

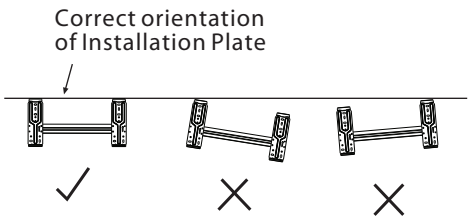
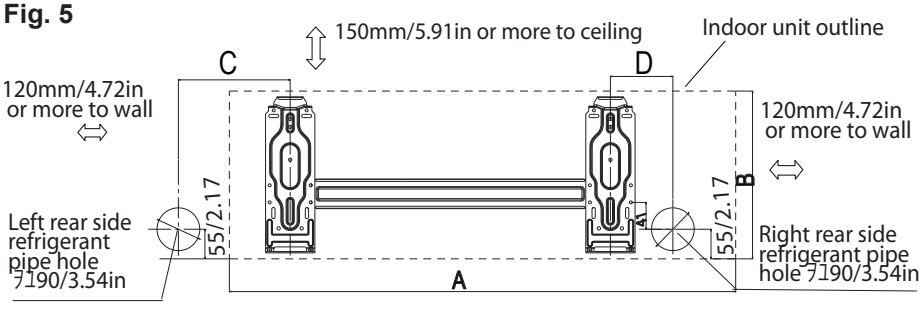


Fig. 5



12000Btu/h models(A:770/30.31, B:255/10.04, C:170/6.69, D:95/3.74)

2. Drill a hole in the wall

- Determine hole positions according to left and right side of the installation plate; see the diagram detailed in Fig.5. The hole center is obtained by measuring the distance as shown in the diagram above.
- Drill one (1) hole (□□90mm/3.54in) slanting
- slightly to outdoor side.
- 2. Always use wall hole conduit when
- drilling metal grid, metal plate or the like.

2. Drill a hole in the wall

1. Determine hole positions according to the diagram detailed in Fig.5. Drill one (1) hole (90mm/3.54in) slanting slightly to outdoor side.
2. Always use wall hole conduit when drilling metal grid, metal plate or the like.

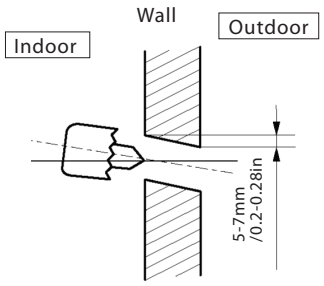


Fig.6

3. Drainage Installation

Drainage

1. Run the drain hose sloping downward. Do not install the drain hose as illustrated in Fig.7.
2. When connecting extension drain hose, insulate the connecting part of extension drain hose with a shield pipe, do not let the drain hose slack.

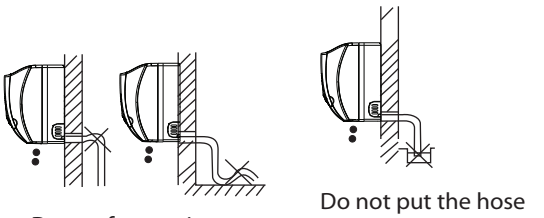


Fig.7

4. Connecting the refrigerant pipes

4.1 Tools needed

-You will require the following tools to carry out this installation work correctly:

1x open-ended spanner, 19 mm/0.75in
1x open-ended spanner, 22 mm/0.87in
1x open-ended spanner, 24 mm/0.95in
1x Allen key, 5 mm/0.2in
1x Philips screwdriver
1x leak detection spray or alternatively soap suds (water/detergent mix)

4.2 Important information

- Follow the detailed instructions for connecting the refrigerant pipes to the indoor unit and outdoor unit. We can only provide a warranty if the lines are installed correctly as described in the instructions.
- Do not remove the sealing caps and stoppers until immediately before you install the lines.
- To prevent leaks, ensure that the quick-release screw connections are absolutely free of dirt. Moisture or foreign bodies will adversely affect the function of the quick-release connectors, leading to a risk of refrigerant loss (not covered by the warranty).
- Only install refrigerant lines outdoors in dry weather.
- The refrigerant lines must not be installed and then plastered over.
- Please make sure that refrigerant is never allowed to enter the environment.
- Improper handling of refrigerant may be harmful to health. Always wear work gloves and goggles when handling refrigerant.

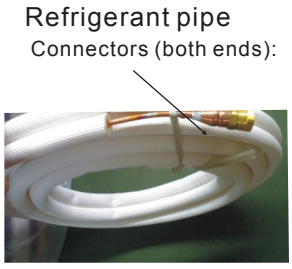


Fig.8

NOTE: To distinguish the connectors to be connected to the indoor unit and outdoor unit, the connectors of the refrigerant pipe has been labelled A, B, C and D. Ensure the marks on the connectors are the same to the indoor and outdoor respectively during connection.

Installation Instructions *(continued)*

- Do not smoke during the installation work. The equipment must never be operated without the refrigerant lines connected, otherwise the equipment will be damaged immediately.
- The screw connections may only be tightened using the appropriate open-ended spanner.
- Remember that if they are tightened with too little torque they will leak but if they are tightened with too much torque, the screw connections may suffer damage. If you should not be confident about connecting the refrigerant line connectors yourself, it is imperative that you contact your customer service team or a refrigeration contractor.

Important! The EQ valves are only designed for one-time installation. Their seal can not be guaranteed if they are installed on more than one occasion. This will also void the warranty.

Fig.9

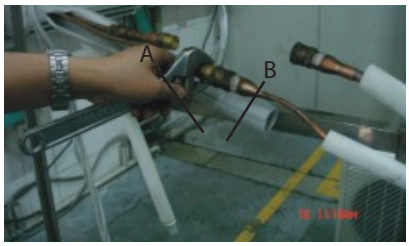


Fig.10a

4.3 Connecting the refrigerant pipes to indoor unit

1. Do not remove the plastic seals from the indoor equiopment and the appropriate refrigerant pipe until immediately before you connect them.
2. Align the refrigerant pipes correctly, make sure the dimensions of the connecting refrigerant pipe are the same. Place the screw connector on the refrigerant pipes just on to the thread on the indoor equipment and tighten the first few threads by hand. See Fig.9.

IMPORTANT: Before you continue, it is essential that you read the following instructions carefully.

Fig.10b

3. Hold the points marked "A" using a 22mm/0.87in open-ended spanner and turn the nuts only at the points marked "B" using a 24mm/0.95in open-ended spanner. See Fig.10a & 10b.
4. Ensure that the screw connectors do not skew as you tighten them and work quickly.

Fig.11

IMPORTANT: Since the coupling works with tapping rings, it may leak if you undo and reconnect the pipes. This will also void the warranty.

5. After finishing the connection, first wrap up the quick connectors with the sound deadening pads(packed with accessories) solidly and tightly as shown in Fig.11, then use the tape to wrap the refrigerant pipe and connecting cable together. See Fig.12.

NOTE: For aesthetic reasons, the quick connector parts are recommended to be placed outside of room.

Fig.12

Note: Route the package of pipes/hoses in the direction of (rear)right or (rear)left. See Fig.13 .

1.Both sides drainage structure is standard. For both sides drainage structure, it can be choosen for right, left or both sides drainage connection. If choosing both sides drainage connection, another proper drain hose is needed as there is only one drain hose offered by factory. If choosing one side drainage connection, make sure the drain hole on the other side is well plugged. For 9k/12k models, if choosing left-hand or left-back piping,please choosing left side drainage connection. The connection of the drain hose is supposed to be done by qualified installer in case of water leakage.

2. Bundle the tubing, connecting cable with tape securely, evenly as shown in Fig.14.

- Because the condensed water from rear of the indoor unit is gathered in ponding box and is piped out of room. Do not put anything else in the box.

CAUTION:

- Do not allow the piping to let out from the back of the indoor unit.
- Be careful not to let the drain hose slack.
- Heat insulated both of the auxiliary piping.
- Be sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause drain pan to overflow inside the unit.
- Never intercross nor intertwist the power wire with any other wiring.
- Run the drain hose sloped downward to drain out the condensed water smoothly.

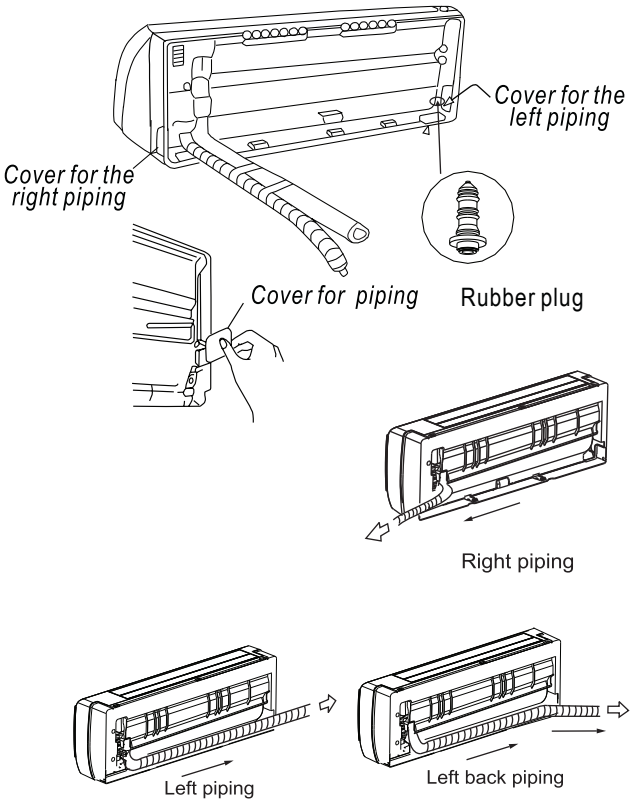


Fig.13

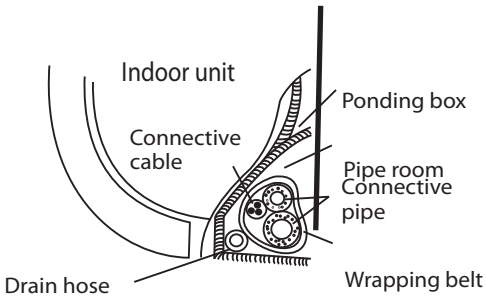


Fig.14

5. Indoor unit installation

1. Feed the package of pipes/hoses through the hole in the wall.
2. Hook the indoor unit onto the upper portion of the installation plate.(Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.) Ensure that the hooks are properly seated on the installation plate by moving it left and right.
3. The female half can easily be made by lifting the indoor unit with a cushioning material between the indoor unit and the wall. Get it out after finish piping.
4. Press the lower left and right sides of the unit against the installation plate until the hooks engage into their slots.

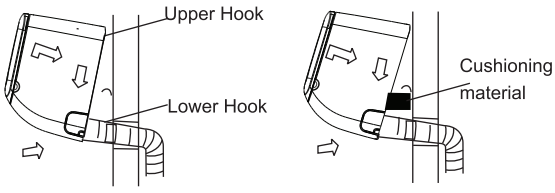


Fig.15

Installation Instructions *(continued)*

Outdoor unit installation

1. Outdoor installation precaution

- Select the location for installation(follow the previous notes on selecting the installation place).
- If the outdoor unit is higher than the indoor unit, make sure that a curve is made in the refrigerant pipe which is lower than the bottom edge of the indoor unit. See Fig.16.
- In the case that the installation place is exposed to strong wind such as a seaside, make sure the fan operating properly by putting the unit lengthwise along the wall or using a dust or shield plates, Fig.17.
- If you need suspending installation, the installation bracket should accord with technique requirement in the installation bracket diagram. The installation wall should be solid brick, concrete or the same intensity construction, or actions to reinforce, damping supporting should be taken. The connection between bracket and wall, bracket and the air conditioner should be firm, stable and reliable.
- Be sure there is no obstacle which block radiating air.

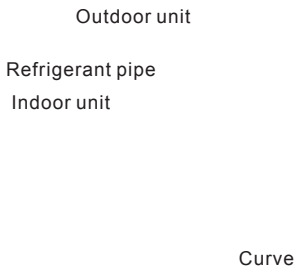


Fig.16

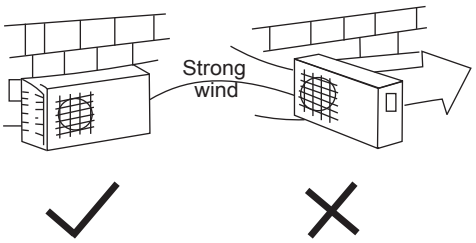


Fig.17

2. Settlement of outdoor unit

- Anchor the outdoor unit with a bolt and nut 10 or 8 tightly and horizontally on a concrete or rigid mount.

Outdoor unit dimension mm/in(WxHxD)	Mounting dimensions	
	A(mm/in)	B(mm/in)
760(29.92)x590(23.23)x285(11.22)	530(20.87)	290(11.42)
820(32.28)x595(23.43)x330(12.99)	523(20.59)	340(13.39)
780(30.71)x540(21.26)x250(9.84)	549(21.61)	276(10.87)
660(25.98)x242(9.52)x540(21.26)	458(18.03)	276(10.87)
840(33.07)x700(27.56)x320(12.6)	560(22.05)	335(13.19)
990(38.98)x965(37.99)x345(13.58)	624(24.57)	366(14.41)

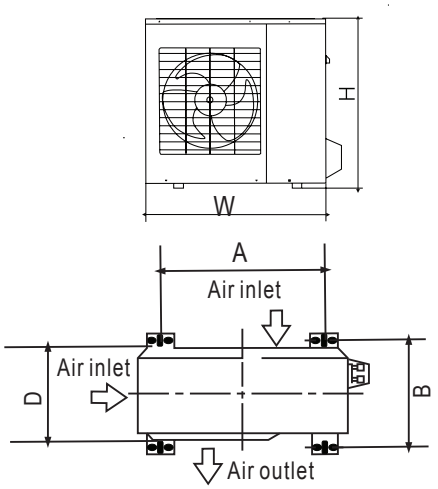


Fig.18

Drain joint installation

NOTE: The drain joint is slightly different according to the different outdoor unit.

For the drain joint with the seal (Fig.19 (A)), first fit the seal onto the drain joint, then insert the drain joint into the base pan hole of outdoor unit, rotate 90° to securely assemble them. To install drain joint as shown in Fig.19 (B), insert the drain joint into the base pan hole of outdoor unit until it remains fixed with a clicking sound. Connecting the drain joint with an extension drain hose (Locally purchased), in case of the water draining off the outdoor unit during the heating mode.

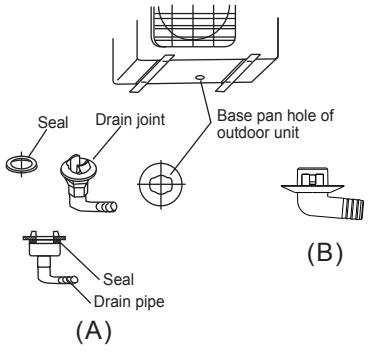


Fig.19

4. Connecting the refrigerant pipe to outdoor unit

CAUTION: For your safety, always wear goggles and work gloves when connecting the pipes.

NOTE: To distinguish the connectors to be connected to the indoor unit and outdoor unit, the connectors of the refrigerant pipe has been labeled A, B, C & D. Ensure the marks on the connector are the same to the indoor and outdoor respectively during connection.

1. First remove the water tray on the outdoor unit as shown in Fig.20.
2. Do not remove the plastic seals from the outdoor unit and the appropriate refrigerant pipes until immediately before you connect them, Fig.21.
3. Align the refrigerant pipes correctly so that they line up with the valves and are not stressed. Place the screw connector on the refrigerant line just on to the thread on the outdoor unit and tighten the first few threads by hand, Fig.22. NOTE: The refrigerant pipes must be connected to the valves on the outdoor unit with as little stress as possible.

IMPORTANT: Before you continue, it is essential that you read the following instructions carefully.

4. Now tighten the bottom screw connector first and then the top screw connector using the open-ended spanner. Hold the points marked A using a 22mm/0.87in open-ended spanner and turn the nuts only at the points marked B using a 24mm/0.95in open-ended spanner. See. Fig.23.

- Ensure that the screw connectors do not skew as you tighten them and work quickly. See the next page for the proper torque.

IMPORTANT: Since the coupling works with tapping rings, it may leak if you undo and reconnect the pipes. This will also void the warranty.

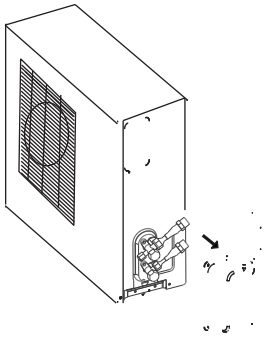


Fig.20

Fig.21

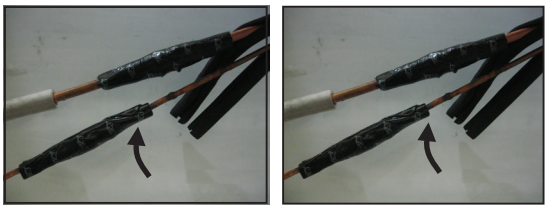


Fig.22

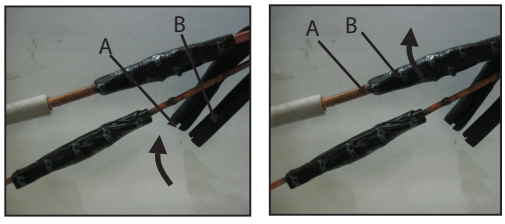


Fig.23

Refrigerant Pipe Connetion *(continued)*

Coupling size (last 2 part numbers)	Pound-force foot(1bf-ft)	Newton meter(N-m)	Kilogram-force meter(kgf-m)
-06(9.5mm/3/8′dash size)	18 - 20	24.4 - 27.1	2.4 - 2.7
-08(12.7mm/1/2′dash size)	30 - 35	40.6 - 47.4	4.1 - 4.8
-12(19.1mm/3/8′dash size)	45 - 50	61.0 - 67.7	6.2 - 6.9
-16(25.4mm/1′dash size)	60 - 65	81.3 - 88.1	8.2 - 8.9

After completing steps 1- 4, check that all the connections are sealed correctly using leak detection spray or soap suds. If any bubbles form, the system has a leak and the screw connectors must be retightened using an open-ended spanner.

5. Now remove the cover on the top valve using a 19 mm open-ended spanner. Open the valve by turning it counter-clockwise as far as it will go using a 5 mm Allen key. The valve is now open. If the valve is not opened fully, the system may malfunction and suffer damage. Screw the cover back on to the top valve and tighten it well to ensure that it is properly sealed. See Fig.24.

6. Now remove the cover on the bottom valve using a 19 mm open-ended spanner. Open the valve by turning it counter-clockwise as far as it will go using a 5 mm Allen key. The valve is now open. If the valve is not opened fully, the system may malfunction and suffer damage. Screw the cover back on to the bottom valve and tighten it well to ensure that it is properly sealed. See Fig.25.

Fig.24

Important! The conical ring on the valve has an important sealing function together with the sealing seat in the caps. Ensure that you do not damage the cone and that you keep the cap free of dirt and dust.

7. After completing steps 1- 6, check that all the connections are sealed correctly using leak detection spray or soap suds. If any bubbles form, the system has a leak and the screw connectors must be retightened using an open- ended spanner.

8. Start the equipment so that the operating pressures build up inside it. Check all the connectors again for signs of leaks
   a) during cooling mode
   b) in heating mode.
   If any bubbles form, the system has a leak and the screw connectors must be retightened using an open-ended spanner.

Fig.25

CAUTION

After the confirmation of the above conditions, prepare the wiring as follows:

1) Never fail to have an individual power circuit specifically for the air conditioner. As for the method of wiring, be guided by the circuit diagram posted on the inside of control cover.
2) The screw which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could cause burn-out of the wires.)
3) Specification of power source.
4) Confirm that electrical capacity is sufficient.
5) See to that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
6) Confirm that the cable thickness is as specified in the power source specification.
7) Always install an earth leakage circuit breaker in a wet or moist area.
8) The following would be caused by voltage drop.

Vibration of a magnetic switch, which will damage the contact point, fuse breaking, disturbance of the normal function of the overload.

Electrical work

Electric safety regulations for the initial Installation

1. If there is serious safety problem about the power supply, the technicians should refuse to install the air conditioner and explain to the client until the problem is solved.
2. Power voltage should be in the range of 90%~110%of rated voltage.
3. The surge protector and main power switch with a 1.5 times capacity of Max. Current of the unit should be installed in power circuit. Ensure the air conditioner is grounded well.
4. The appliance shall be installed in accordance with national wiring regulations. Do not operate your air conditioner in a wet room such as a bathroom or laundry room.
5. An all-pole disconnection device which has at least 3mm clearances in all poles, and have a leakage current that may exceed 10mA, the residual current device(RCD) having a rated residual operating current not exceeding 30mA, and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
6. For the unit adopts auxiliary electric heater, keep at least 1 meter away from the nearest combustible materials.
7. According to the attached Electrical Connection Diagram located on the panel of the indoor & outdoor unit to connect the wire. All wiring must comply with local and national electrical codes and be installed by qualified and skilled electricians.
8. An individual branch circuit and single receptacle used only for this air conditioner must be available. See the following table for suggested wire sizes and fuse specifications:

Suggested Minimum Wire Size (AWG:American Wire Gage):

Appliance Amps	AWG Wire Size
10	18
13	16
18	14
25	12
30	10
40	8

NOTE:

- The wire size of power supply cord and interconnected wire and the current of the fuse or switch are determined by the maximum current indicated on the nameplate which located on the side panel of the unit. Please refer to the nameplate before selecting the wire size, fuse or switch.
- The controller of the air conditioner designed with a fuse protection function under abnormal conditions, the specifications of the fuse have printed on the circuit board, such as: 3.15A/250VAC, T5A/250VAC, etc.

Electrical Work *(continued)*

Connect the cable to the indoor unit

NOTE: Before performing any electrical work, turn off the main power to the system.

1. The inside and outside connecting cable can be connected without removing the front grille.
2. The indoor power cord type is H05VV-F or H05V2V2-F, the outdoor power cord and interconnected cord type is H07RN-F.
3. Lift the indoor unit panel up, remove the electrical box cover by loosening the screw.
4. Ensure the colour of wires of outdoor unit and the terminal Nos. are the same to the indoor s respectively.
5. Wrap those cables not connected with terminals with insulation tape so that they will not touch any electrical components. Secure the cable onto the control board with the cord clamp.

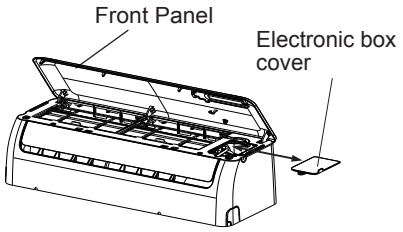
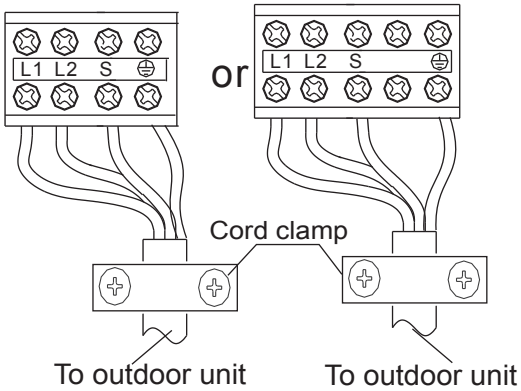


Fig.26

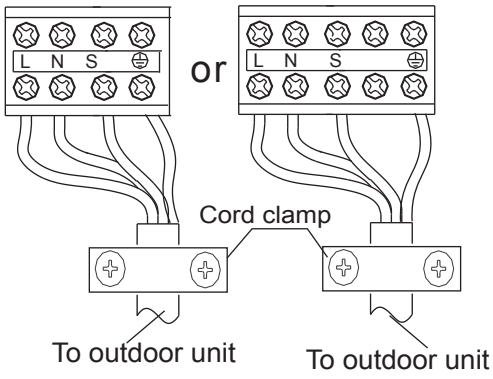
Terminal block of indoor unit



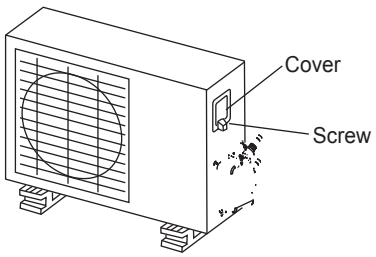
Model A

Connect the cable to the outdoor unit

1. Remove the electrical control board cover from the outdoor unit by loosening the screw.
2. Connect the connective cables to the terminals as identified with their respective matched numbers on the terminal block of indoor and outdoor units.
3. Secure the cable onto the control board with the cord clamp.
4. To prevent the ingress of water, form a loop of the connective cable as illustrated in the installation diagram of indoor and outdoor units.
5. Insulate unused cords (conductors) with PVC-tape. Process them so they do not touch any electrical or metal parts.



Model B



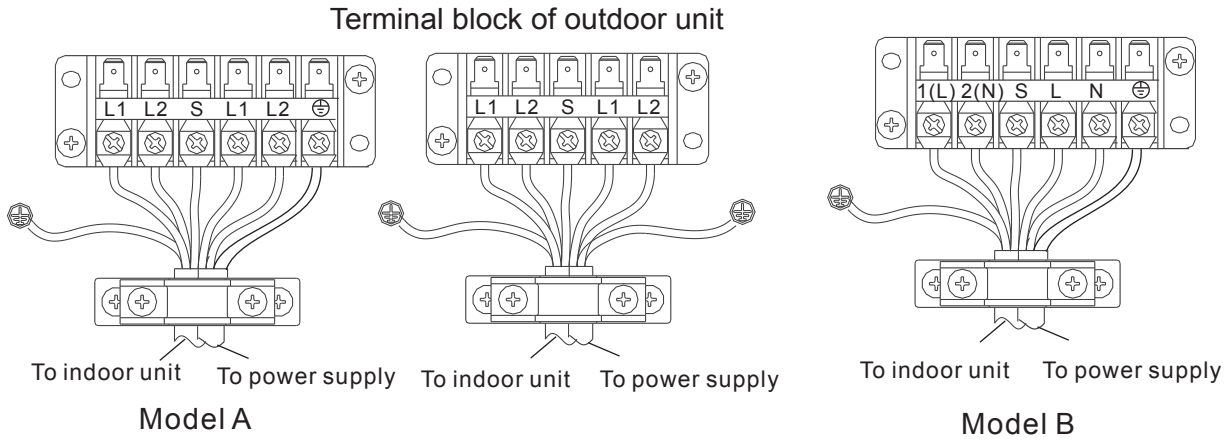


Fig.27

Test running

Perform test operation after completing gas leak check at the flare nut connections and electrical safety check.

- Check that all tubing and wiring have been properly connected.
- Check that the gas and liquid side service valves are fully open.

1. Connect the power, press the ON/OFF button on the remote controller to turn the unit on.
2. Use the MODE button to select COOL, HEAT, AUTO and FAN to check if all the functions works well.
3. When the amient temperature is too low(lower than 17 C), the unit cannot be controlled by the remote controller to run at cooling mode, manual operation can be taken. Manual operation is used only when the remote controller is disable or maintenance necessary.
   - Hold the panel sides and lift the panel up to an angle until it remains fixed with a clicking sound.
   - Press the Manual control button to select the AUTO or COOL, the unit will operate under Forced AUTO or COOL mode(see User Manual for details).
4. The test operation should last about 30 minutes.

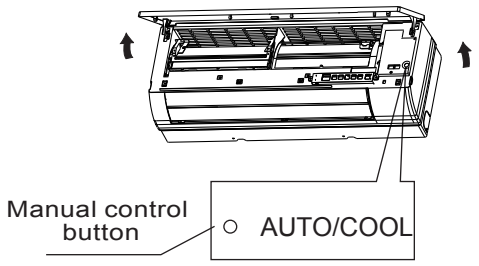


Fig.28

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Printed in China